

REMARKS

Applicant would like to thank Examiner Bret Chen's courtesy in conducting a phone interview on January 6, 2009. Claims 1-9, 11-18, 21-25 remain in this application. Reconsideration in light of the amendments and remarks made herein is respectfully requested.

During the phone interview, the Examiner acknowledged that he did not examine the 1.131 declaration of Applicant Anand Chellappa, submitted with the previous response to the Office Action. The 1.131 declaration establishes diligence toward reduction to practice of the invention(s) claimed in this application in the United States, prior to June 13, 2002, and, therefore, before the earliest claimed priority date of *Brophy et al.* (U.S. Publ. No. 2004/0034266) (referred to herein as "*Brophy*").

Instead, the Examiner only considered the 1.132 declaration, which was also provided with the previous response to the Office Action. In response to the 1.132 declaration, the Examiner withdrew the rejection relying on the *Sandia* reference, and raised a new ground of rejection combining *Brophy* with a new reference *Ewasyshyn et al.* (U.S. Publ. No. 2003/0219542) (referred to herein as "*Ewasyshyn*").

Applicant also noted in the phone interview that the present Office Action of November 5, 2008, did not consider the substantive arguments made in lieu of the 1.131 declaration. The substantive arguments were made to highlight the numerous deficiencies in *Brophy*. Instead, the present Office Action notes that the "arguments with respect to the claims above have been considered but are moot in view of the new ground(s) of rejection" [Office Action, pg. 4].

Since the 1.131 declaration and the arguments made in lieu of the 1.131 declaration were inadvertently not considered before the present Office Action 008, the Examiner suggested that the Applicant should file the present response indicating the same. Applicant appreciates the Examiner's courtesy and look forward to receiving the Examiner's substantive examination on the above in the next non-final office action.

As noted above, the present Office Action raised a new ground of rejection combining *Brophy* with a new reference *Ewasyshyn*. The Office Action rejected claims 1-9, 11-18, 21-25 under 35 U.S.C. § 103(a) as being unpatentable over *Brophy* in view of *Ewasyshyn*.

Applicants respectfully traverse this rejection.

Applicant submits that *Brophy* is not a prior art reference, as supported by the 1.131 declaration, and respectfully requests that the obviousness rejection be withdrawn. Furthermore, *Ewasyshyn et al.* fails to supplement the deficiencies of *Brophy*.

Independent claim 1 recites a “method for preparing a hydrogen generation reactor chamber to reduce coking, the method comprising: applying a cold spray of an alkaline oxide or oxides doped with alkali or alkaline earth metals, mixed with metal to at least one surface within the chamber.” [emphasis added]. As recited in claim 1, the composition of the material applied is a mixture of (1) an alkaline oxide or oxides doped with alkali or alkaline earth metals and (2) metal.

As the Office Action noted, *Brophy* teaches that reactor walls can be coated with a passivation layer to reduce coking. [*Brophy*, para. 0077]. “Suitable passivation coatings include a refractory oxide such as silica, alumina, zirconia, titania, chromia, ceria, Group II metals (alkaline earths) and rare earth metals, atomic numbers 57-71.” *Id.*

First, *Brophy* fails to disclose, teach or suggest an alkaline oxide. Rather, *Brophy* lists oxides that are non-alkaline (“silica, alumina, zirconia, titania, chromia, ceria”). [*Brophy*, para. 0077]. *Brophy* also lists alkalines that are not oxides (“Group II metals (alkaline earths) and rare earth metals”). [*Id.*]. However, *Brophy* does not disclose constituents that are alkaline oxides.

Second, *Brophy* fails to disclose, teach or suggest an oxide doped with alkali or alkaline earth metals. As is known to persons skilled in the art, doping refers to “the process of intentionally introducing impurities into an extremely pure [material] to change its ... properties.” See Wikipedia.com. *Brophy* merely lists individual oxides as “suitable passivation coatings” without any reference to doping with alkali or alkaline earth metals. [*Brophy*, para. 0077]. In fact, the word “doping” or any derivative thereof was never mentioned in *Brophy*. Because *Brophy* does not disclose, teach or suggest doping, it does not satisfy the limitation of an oxide doped with alkali or alkaline earth metals.

Third, *Brophy* fails to disclose, teach or suggest that the composition of the material applied is a mixture. Rather, as noted above, *Brophy* provides only a list of “suitable passivation coatings” that includes individual oxides and alkaline metals. [*Brophy*, para. 0077].

We have already demonstrated the inadequacies of *Brophy*, and under 35 U.S.C. § 103, it would be incumbent upon the teaching of *Ewasyshyn* to provide a teaching reference for supplementing the deficiencies of *Brophy*.

As the Examiner noted, *Ewasyshyn* is directed to a method of spraying a powder through a super sonic nozzle [Office Action, pg. 2]. The powder containing a mixture of metals or metal alloys with a ceramic material [Office Action, pg. 3]. While *Ewasyshyn* discloses powder spraying, it fails to disclose, teach or suggest the inadequacies of *Brophy* emphasized above.

Ewasyshyn fails to disclose, teach or suggest an alkaline oxide. *Ewasyshyn* lists constituents for a powder that includes metals, alloys, and ceramics listed in Table 1. [*Ewasyshyn*, Table 1]. However, none of the constituents listed are an alkaline oxide. The only oxides listed were non-alkaline oxides (Al_2O_3 , B_2O_3 , SiO_2 , and ZrO_2).

Furthermore, *Ewasyshyn* fails to disclose, teach or suggest an oxide doped with alkali or alkaline earth metals. Rather, *Ewasyshyn* merely lists individual metals, alloys, and ceramics without any reference to doping with alkali or alkaline earth metals. [*Ewasyshyn*, Table 1]. As discussed above, doping is not merely a mixture of two substances, but rather a chemical process that introduces an impurity into material to change its properties. Like *Brophy*, the word “doping” or any derivative thereof was also never mentioned in *Ewasyshyn*.

Consequently, because the combined prior art references fail to teach all the limitations, independent claim 1 is nonobvious. Hence, Applicant respectfully request that the rejection be withdrawn.

Dependent Claims 2-9, 11-18, 21-22

Claims 2-9, 11-18, 21-22 depend from claim 1. Thus, these claims are patentable for the same reasons advanced with respect to claim 1.

Claims 23-25


Independent claims 23-25 are patentable for the same reasons advanced above with respect to claim 1.

Applicants respectfully submit that all the claims remaining in the application are now in condition for allowance, and respectfully request that the application be passed to issue. Should any residual matters left to be resolved, the Examiner is invited to contact the undersigned agent at 714.708.6682 (office) at his convenience.

The Commissioner is hereby authorized to charge any required fee in connection with the submission of this paper, now or in the future, or credit any overpayment to Account No.: 50-2638. Please ensure that Attorney Docket Number 073358-031800 is referred to when charging any payments or credits for this case.

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Respectfully submitted,



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